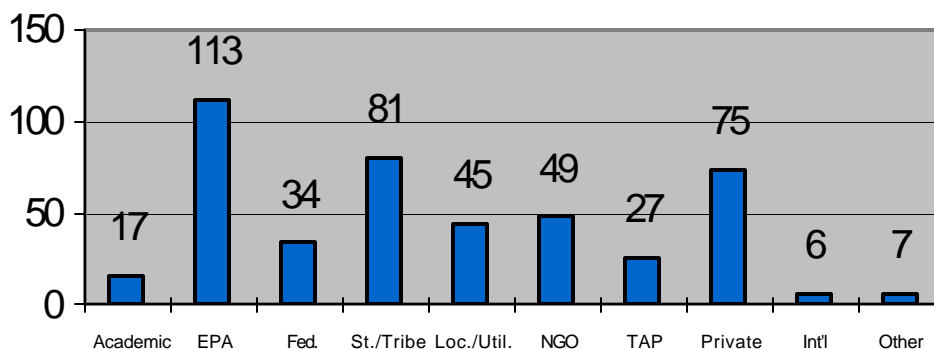


2003 NATIONAL SOURCE WATER PROTECTION CONFERENCE DRAFT SUMMARY AND HIGHLIGHTS

EPA held its National Source Water Protection (SWP) Conference on June 2-4, 2003 at the Hotel Washington, in Washington DC. The conference, timed to promote SWP as 165,000 source water assessments were due to be completed, offered an opportunity for participants to share their experiences, learn about protection strategies, and network with others who are working to promote source water protection.

Over 450 people attended the Conference. Participants came from 47 states, the District of Columbia, and two Canadian provinces. They represented all levels of government agencies from local, federal, and tribal utilities, technical assistance providers and health care workers, and private citizens.

Affiliation of Conference Participants



The conference focused on the “Path to Protection,” six steps for moving from a completed source water assessment to an effective protection strategy. These steps are: (1) review assessments, (2) prioritize actions, (3) identify and motivate key actors, (4) mobilize and develop a strategy for protection and security, (5) implement source water protection strategy, and (6) measure results.

The conference covered many topics of interest to SWP stakeholders—from understanding assessments and using technology to forging beneficial partnerships and obtaining the necessary resources to implement effective source water protection strategies. Out of the many presentations and discussions, some common themes emerged:

- **Partnerships are valuable.** A variety of stakeholders can productively contribute to effective SWP initiatives. Each offers a unique perspective on all of the activities that affect source water, and can communicate SWP messages to their constituencies.

Furthermore, partners may offer mutual opportunities to leverage resources, combine efforts, or make use of existing authorities. It is important to know who the stakeholders are and to involve them early in the process. Partners can include local and regional environmental and citizens' groups, water utilities, local officials, schools, businesses, farmers, conservation districts, state program managers (drinking water, flood plains, hazardous waste, and others), federal agencies, watershed groups, land conservancies and non-profit organizations, rural water associations, neighboring jurisdictions, and universities/extension programs. See more on partnerships in Sessions A2, B4, C1, C2, and C4.

- **Coordination is important.** Sharing information with other agencies and organizations can get them involved and motivated to protect drinking water sources. Including SWP in their priorities can be mutually beneficial and may increase available resources and manpower, and help to overcome resistance. See more on coordinating for SWP in Sessions A1, A2, A3, B1, C1, C2, C3, and C4.
- **Technology is a powerful tool.** Geographic information systems (GIS) are being used as an effective tool for identifying and managing threats, communicating potential source water threats and protective actions to decision makers, and overseeing management activities by providing maps that allow visualization of the areas being protected. Software packages, templates, and models can facilitate completing vulnerability assessments (VAs) or drafting local ordinances. The Internet is a powerful communication and information sharing tool. SWP planners can access data from various state and federal Web sites (see the appendix for a list). See more on how technology can improve SWP in Sessions A1, A3, A4, C1, C2, and C4.

Funding is always a concern. All communities and government agencies, from local to federal, are cash-strapped. Resources are available through a variety of sources, such as the [Clean Water Act \(CWA\)](#) and [Safe Drinking Water Act \(SDWA\)](#) State Revolving Funds (SRF), CWA Section 319 funds, and the Farm Bill. Implementing protection measures and increased public awareness can provide substantial cost savings by reducing monitoring requirements (through waivers) or avoiding expensive treatment. Sharing information on available funding is important as well. See more on funding in Sessions B1, B3, B4, C3, and the Financing Plenary.
- **Outreach and education are a must.** Citizens, business owners, farmers, and others need to understand where their drinking water originates, how their actions affect its quality, and what they can do to protect it. Local water system staff may need training on specific SWP measures and available technologies, such as GIS, as well. Schools and community events are good avenues for knowledge transfer; public service announcements or a national advertising campaign could help. See more on outreach and education in Sessions A1, A2, A3, A4, C1, C2, and C4.
- **Communication is a key part of a successful SWP strategy.** Stakeholders need to be involved throughout the planning and implementation of a SWP strategy. Certain groups, such as farmers and business owners, can be contacted and involved through organizations that serve these groups. Sharing information should be balanced with security concerns, however. Communication across federal and state programs is also important. See more on effective communication in Sessions A2, A4, C1, C2, and C4.

- **There are new opportunities to support protection.** Initiatives under the Farm Bill; Homeland Security; state and local initiatives; and innovative technologies, such as GIS and best management practices (BMPs), all present opportunities to develop or fund effective SWP strategies. See more on new opportunities in Sessions A2, A3, A4, B2, C4, and the Financing Plenary.
- **Source water protection is just starting.** Conference participants shared and discussed ideas for follow-up actions EPA should take to promote SWP. Participants have begun to network and take follow-up actions as well.

For more information on source water protection, including news, updates to conference follow-up activities, links to states' and partners' Web sites, guidances and outreach materials, visit www.epa.gov/safewater/protect/swpconf.html.

PLENARY SESSION SPEECHES

Visit the [National SWP Conference web site](#) for the text of the plenary session speeches.

Opening Plenary: Making the Case for Action (Monday, June 2)

The conference's opening session was a call to action, and featured commitments to protection from Mike Baker, President of the Ground Water Protection Council (GWPC); Jeff Stuck, incoming President of the Association of State Drinking Water Administrators (ASDWA); and G. Tracy Mehan, III, Assistant Administrator for Water. Former U.S. Senator Paul Simon provided an international perspective on the need to conserve and protect water sources.

Mike Baker, Chief of the Drinking and Groundwater Division, Ohio EPA, and President of the Ground Water Protection Council, said that many states are actively pursuing protection, but that effective SWP must take place at the local level. He emphasized the need to protect ground water sources, given that 90 percent of public water systems rely on ground water.

Jeff Stuck, Manager, State of Arizona Safe Drinking Water Program, and incoming President of the Association of State Drinking Water Administrators, discussed the four "Ps" of source water protection: public health, patience, perseverance, and partnering.

G. Tracy Mehan, III, Assistant Administrator for Water, U.S. Environmental Protection Agency, said there are three key concepts for protecting source water: prevention, integration, and collaboration. He highlighted EPA's commitments to working at the watershed level to make SWP work; discussed the importance of interagency cooperation and partnerships with the agricultural sector to achieve SWP integrating actions; and concluded by encouraging participants to begin collaboration efforts at the conference.

Senator Paul Simon, Director, Public Policy Institute, Southern Illinois University and former U.S. Senator, delivered the conference's keynote speech. He discussed the world's water crisis and the need to focus on long-term water quantity and quality issues. Conservation is critical and

desalination is an effective option for meeting the world's water needs. Even seemingly small actions can make a big difference.

Partnerships for Protection (Tuesday, June 3)

Because the Path to Protection is not a journey to be taken alone, partnerships are an important element of a successful SWP strategy. Susan Seacrest, President, The Groundwater Foundation, spoke about the role of partnerships in source water protection.

Closing Plenary and Charge to Action (Wednesday, June 4)

To begin to translate the energy and enthusiasm gained during the conference into action, Dr. Jeffrey Griffiths, Director, Graduate Programs in Public Health, Tufts University School of Medicine, gave a speech on one of the most important reasons to protect drinking water: public health.

The conference closed with a facilitated panel discussion, titled "It's In Your Hands: Next Steps on the Path to Protection." Panel members representing local, regional, and federal partners for protection spoke about where they are along the path to protection, what they have learned from the conference, partnerships for SWP, and how they believe EPA can support SWP.

Bill Diamond, Director, Drinking Water Protection Division, EPA's Office of Ground Water and Drinking Water, closed the conference by highlighting the major issues that arose during the conference and challenging everyone to make source water protection a success.

BREAKOUT SESSION SUMMARIES

During twelve breakout sessions, conference participants had multiple opportunities to explore topics of interest to them. Brief descriptions of each session are provided below; copies of slide presentations are available on the [National SWP Conference web site](#).

A1. Assessments as a Tool to Launch Protection

This session addressed how source water assessment results can be used in setting priorities and developing effective SWP strategies. Representatives of six states (Oregon, California, Ohio, Massachusetts, Vermont, and Maine) presented an overview of their assessment results. For surface water systems, top contamination threats include agriculture, roads and highways, and septic systems. For ground water systems, wells and abandoned wells, septic systems, high density housing, underground storage tanks, and roads and highways were most prevalent. EPA's [State SWP contacts web page](#) provides links to all state SWP programs.

The states' next steps include sharing results and data and coordinating with other agencies for prioritization. For example, under the [Clean Water Action Plan](#), Oregon works with the US Forest Service and the Bureau of Land Management to give those agencies clear directives to make drinking water protection a priority. Susceptibility results can be used to develop strategies for addressing the top threats and building a case for systems to protect. States also provided information on encouraging systems to use available tools, such as SRF and SWP loans or state-developed tool kits.

States reported that challenges for implementing SWP include insufficient staff and resources, getting buy-in from local officials and the public, and making information available without compromising security.

Presenters in this session included:

- Sheree Stewart, Program Coordinator, Oregon Department of Environmental Quality, Moderator. *Assessments as a Tool to Launch Protection*
- Leah Walker, California Department of Health Services. *Assessment Inventory Results: Identifying Priorities and Actions in California*
- Barb Lubberger, Ohio Environmental Protection Agency. *Ohio - Status of Inventories*
- Andrew Durham, Massachusetts Department of Environmental Protection. *SWAP and Tracking*
- Rodney Pingree, Vermont Department of Environmental Conservation. *Vermont's Approach to Drinking Water Source Protection*
- Andy Tolman, Maine Drinking Water Program. *Using Source Water Assessments for Source Water Protection*

A2. Communicating Assessment Results: Effective Communication Strategies

This session presented effective strategies for communicating source water assessment results to achieve successful protection, and highlighted working with citizens, businesses, and the agricultural community (see session C4 for more on rural partnerships). Ideas that applied across

all audiences include the importance of education (to citizens, business owners, and farmers), partnerships, communication, working side-by-side with the community, and understanding prospective partners' concerns (i.e., that SWP is not their top priority, they have limited resources, and are very busy).

Presenters in this session included:

- Beth Hall, EPA Office of Ground Water and Drinking Water, Moderator.
- Don Haydel, Geologist III, Louisiana Department of Environmental Quality. *Louisiana Drinking Water Protection Pilot Program*
- Mike Davis, Drinking Water Advocate, Clean Water Fund/Clean Water Action. *Clean Water Fund's "Watershed to Water Tap Project"*
- L.D. McMullen, CEO and General Manager, Des Moines Water Works. *Water Quality and Non Point Pollution Control*
- R. Thomas Van Arsdall, President, Van Arsdall and Associates, Inc. *Communicating SWA Results to Maximize SWP Opportunities*

A3. Using Geo-Spatial Tools to Target Protection

This session highlighted how geographic information systems (GIS) can be used by local, state, and federal governments to analyze and display assessment results and to promote source water protection.

At the local level, the Detroit Lakes (MN) Public Utilities Department used the Global Positioning System (GPS) to locate private wells and underground storage tanks. The effort benefitted from GIS because it established a database that promoted better management of potential contaminants, and allowed Detroit Lakes to easily update their contaminant inventory as land uses change. GIS is also a useful educational tool—maps can be easily produced and used in meetings to educate the public and promote the awareness of protection efforts.

At the state level, Delaware developed a Source Water Assessment Program (SWAP) database that contained public well data, updated with Safe Drinking Water Information System (SDWIS) analytical data. They used EPA's [Wellhead Analytic Element Model \(WhAEM\)](#) to delineate capture zones and SWP areas. The state uses GIS tools to generate maps and populate the SWAP database. GIS benefits the State by allowing "real time" availability of information from both water supply management agencies and contaminant source or land use management agencies.

At the federal level, EPA uses GIS to integrate the CWA and SDWA programs through a common geographic reference point; to support decision making; to target federal resources and prioritize their use through co-location of their regulated entities in source water assessment areas; and to collaborate with states and locals to pursue joint initiatives that support SWP. EPA also plans to make tools available to help communities continue SWP work after their assessments are complete, including updating assessments. One example is [WATERS](#), a data integration tool containing EPA and USGS data.

Presenters in this session included:

- David Jennings, Geographer, Washington Department of Health, Moderator.
- Jarrod Christen, Water-Wastewater Supervisor, Detroit Lakes Public Utilities. *City of Detroit Lakes*
- John Barndt, Environmental Program Manager, Delaware Department of Natural Resources and Environmental Control. *Delaware Source Water Assessment and Protection Program*
- Bill Diamond, Director, Drinking Water Protection Division, EPA Office of Ground Water and Drinking Water. *Using GIS Data & Tools to Support Source Water Protection—Targeting Resources Through Program Integration*

A4. Source Water Protection and Homeland Security: Making the Connection at the Federal, State, and Local Level

This session highlighted the relationship between security and SWP, and activities by EPA, states, and others to link the two. EPA's role in water infrastructure security includes implementing parts of the "Bioterrorism Act" that require and provide grants to larger systems to complete vulnerability assessments (VAs) and emergency response plans (ERPs). EPA has a Homeland Security Strategic Plan to enhance the security of water and wastewater utilities, and provide tools to help systems perform their VAs and ERPs such as grants, guidances, and training. Integrating drinking water protection and security hinges on a variety of partnerships, with schools, citizen groups, businesses, and law enforcement.

New Hampshire is promoting security by assisting water systems on vulnerability assessments and emergency plans, providing planning grants to large systems to address mutual aid/interconnection needs, establishing protocols for roles in an emergency, and funding security measures.

The challenges to small and medium water systems in completing a VA include having the necessary skills, tools, information, qualified staff or contractors, and time/resources.

The Integrated Water Quality Security System (IWQSS) is a computer tool that models potential consequences of a spill. It can model fate and transport of a spill, simulate water treatment effectiveness, model water distribution, and calculate the population and infrastructure at risk. IWQSS includes PipelineNet and RiverSpill, GIS-based tools that track and model the flow of contaminants through a city's pipeline infrastructure and in a water supply.

Presenters in this session included:

- Kevin McCormack, EPA Office of Ground Water and Drinking Water, Moderator.
- Janet Pawlukiewicz, Director, EPA Water Protection Task Force, Office of Ground Water and Drinking Water (OGWDW). *Water Infrastructure Security: EPA's Role and Progress*
- Jane Downing, Associate Director, EPA Region I, Office of Ecosystem Protection. *Opportunities to Integrate Source Water Protection and Security Efforts*
- Sarah Pillsbury, New Hampshire Office of Environmental Services. *Water System Security – New Hampshire's Experience*
- Scott Custer, Principal, Custer Battles, P.C. *The Challenges in Completing a VA*
- William B. Samuels, Ph.D., SAIC, Inc. *Integrated Water Quality Security System: RiverSpill and PipelineNet*

B1. CWA/SDWA Integration: Linking Watershed Protection and Source Water Protection

This session presented Clean Water Act programs and highlighted important opportunities to leverage and integrate these programs with source water protection activities. The CWA/SDWA integration discussion was continued in Session C3.

In the first panel discussion, senior managers in EPA's Office of Water discussed how EPA is working to integrate CWA and SDWA priorities. See the transcript under questions and answers below.

A second presentation highlighted CWA and SDWA program integration efforts in Idaho. The State links the Total Maximum Daily Load (TMDL) Program, SWP, and Section 319 non-point source (NPS) grants in an integrated watershed management approach to protect water quality, that recognizes the importance of locally-based watershed and source water protection initiatives. For example, Idaho's NPS program addresses agriculture, mining, silviculture, hydrologic/habitat modification, urban stormwater, and transportation.

In Blaine County, the Blaine County Drinking Water Protection Coalition is developing and implementing SWP plans and promoting communication between stakeholders. They have created an overlay district and ordinance to regulate land use within SWP areas, requiring that the water systems be notified of and evaluate development proposals within the SWP areas. Other components of Blaine County's plan include water quality monitoring, water resource protection programs, and septic system inspections.

Presenters in this session included:

- Mike Baker, Ohio Environmental Protection Agency and President, Ground Water Protection Council, Moderator.

Panel 1:

- Geoff Grubbs, Director, EPA Office of Science and Technology.
- Jim Hanlon, Director, EPA Office of Wastewater Management.
- Diane Regas, Director, EPA Office of Wetlands, Oceans, and Watersheds.

Panel 2:

- Todd Maguire, Program Manager, Idaho Department of Environmental Quality.
- John Bokor, Idaho Rural Water Association.

Questions and Answers for Office of Water Panel

Question: Do states and tribes have adequate drinking water standards under the CWA to protect drinking water?

Answer: **Mr. Grubbs** replied that the Agency is in the process of taking a closer look at this, since we don't know for certain whether all state and tribal standards protect drinking water sources. EPA believes that, for the most part, appropriate standards are in place and are protecting drinking water. States and authorized tribes adopt water quality standards based on EPA's regulations and guidance; EPA must approve state and tribal standards, or issue federal standards to replace deficient ones. EPA's review of whether appropriate standards are in place is one of the top ten priority actions in the Agency's Water Quality Standards and Criteria Strategy. Under the Strategy, EPA will work with the states and tribes to evaluate whether there may be surface waters serving as drinking water sources whose water quality standards are not sufficiently protective, and take action if gaps are found. If this is a significant problem across the country, it would represent a critical missing link in public health protection.

Question: What types of funding are available for source water protection?

Answer: **Mr. Hanlon** replied that, in addition to the DWSRF, the Clean Water SRF provides low interest loans for projects that address SWP. The CWSRF is the Agency's largest water quality funding program. As of 2002, 30 states had funded non-point source projects that are protecting drinking water, including purchase of land or easements, wetland protection and restoration, remediation of contamination from leaking USTs, agricultural BMPs for both crop and small animal operations, and upgrading and replacement of failing onsite septic systems. EPA has developed a fact sheet on [Protecting Drinking Water with the Clean Water State Revolving Fund](#).

Question: How is the Office of Wetlands, Oceans, and Watersheds (OWOW) helping to advance SWP through watershed-based planning?

Answer: **Ms. Regas** responded that watershed plans are developed and implemented to meet SWP goals, among others. OWOW is encouraging better coordination between its core CWA programs and the SDWA, including greater emphasis on comprehensive watershed planning and implementation, and funding to encourage more integrated approaches. For example, under [Section 319 of the CWA](#), EPA has developed Guidance on funding the development of comprehensive watershed-based plans and protective measures, such as BMPs, to address impaired waters and safeguard drinking water sources. TMDLs, which are required under CWA Section 303(d) for impaired or threatened waters, can also be effective tools for source water protection. They are essentially "pollution budgets" that establish overall caps on loading rates, consistent with meeting Water Quality Standards. Water Quality Trading offers an opportunity

to protect drinking water by ratcheting down on non-point sources and providing strong economic incentives for farmers to implement BMPs to control nitrates and other pollutants. The [Catalog of Federal Funding Sources](#) provides information on other sources of funding for local watershed projects.

Question: What is considered to be adequate for state and tribal water quality standards?

Answer: **Mr. Grubbs** replied that EPA has issued water quality criteria recommendations for protection of drinking water under Section 304(a) of the CWA, and states and tribes must consider this information and adopt the EPA criteria or develop their own criteria based on sound science. EPA must approve the standards. He added that EPA takes all available scientific information into account when approving or disapproving state and tribal standards, but does not specify rigid national quantitative factors in approving them, since there may be scientifically or administratively acceptable reasons for why a particular value is considered adequate. These may include variations in the inputs for calculating a criterion (e.g., the level of protection or exposure factors, such as fish consumption rates), or administrative or judicial orders that may dictate schedules and requirements for updating criterion values. Mr. Grubbs added that other factors also come into play, such as complex jurisdictional issues in Indian country, and historical modifications (e.g., dams). Water quality standards for 85 parameters have recently been revised based on new science; 13 additional standards are now undergoing public comment. **Mr. Baker** added that the Office of Science and Technology plays the lead role in establishing standards, and states are the lead on implementing them.

Question: How is or will SWP be addressed in the National Pollutant Discharge Elimination System (NPDES) permitting program?

Answer: **Mr. Hanlon** said that the CWA requires all permits be written to meet water quality standards. The NPDES Program is looking at ways to better tailor permits to meet watershed goals, which include protecting drinking water sources. In January 2003, EPA issued the [Watershed Based Permitting \(WBP\) Policy](#). The Policy outlines a permitting approach for protecting water quality by addressing all stressors within a watershed instead of viewing individual sources in isolation. Permits are written to fit into the larger watershed management approach. Combining WBP data and SWP data can benefit both programs and provide some efficiencies for protecting water quality. States must review standards every three years, and are encouraged to review old permit decisions in the light of the WBP approach.

Question: How is EPA working to improve monitoring and assessment of data?

Answer: **Ms. Regas** replied that in the past, there have been concerns about EPA's ability to characterize and assess the state of the nation's drinking water. OWOW has produced several documents on monitoring, including its new guidance, [Elements of a State Monitoring and Assessment Program](#), which provides for a more integrated approach that will help ensure that management decisions are based on a comprehensive assessment of all state waters, including ground water. The Guidance also encourages states to assess their waters for all applicable uses,

and makes recommendations about selecting appropriate indicators/measures for drinking water use. Ms. Regas added that EPA will continue to encourage partnerships and collaborative efforts to leverage scarce resources to fill in existing data gaps. State Monitoring Councils can be effective in coordinating monitoring efforts of various government agencies and others. She added that states should put data, particularly source water assessment data, into EPA's STORET (STORage and RETrieval) data base.

Question: How can we better integrate ground water considerations under CWA/SDWA? Is anything happening at the federal level?

Answer: **Ms. Regas** answered that addressing water pollution issues should be included in a water quality plan—a natural part of that effort is to include ground water sources. Where applicable, EPA is beginning to address ground water in CWA rulemakings, yet there are many technical challenges associated with considering ground water. Obtaining monitoring data and making it available are good first steps. **Mr. Grubbs** added that some state non-point source programs have done a lot of work on ground water and surface water interaction issues. Further work needs to be done to collect data and assess the methods and tools being used for this work, and examine how we can move forward to help states address this issue.

B2. Conservation and Land Acquisition

Water utility and nonprofit representatives discussed the conservation and land acquisition tools and strategies they use for SWP. Suffolk County (NY) received a loan from the New York Clean Water State Revolving Fund for land acquisition to protect the main recharge zone for its drinking water supply. The Cherry Creek (CO) Smart Growth for Clean Water Partnership is protecting the quality of the Cherry Creek Reservoir and reducing phosphate loads through land acquisition and partnerships with developers and public agencies in one of the fastest growing regions of the nation. In Brick Township (NJ), although water quality in the Metedeconk River watershed is currently good, booming growth and high-density zoning are leading the utility and the Township to begin using land conservation and forest management, particularly in the undeveloped headwaters of the river, where they are partnering with the state on land conservation.

Presenters in this session included:

- Kathy Blaha, Senior Vice President, Trust for Public Land, Moderator. *The Trust for Public Land – Using Land Conservation Strategies for Protecting Drinking Water Sources*
- Steve Jones, President, Suffolk County (NY) Water Authority. *Suffolk County Water Authority*
- Chris Rowe, Director, Cherry Creek (CO) Stewardship Partners.
- Steve Specht, Director of Engineering, Brick Township (NJ) Municipal Utility Authority. *Strategies for Protecting A Watershed: The Metedeconk River Watershed Management Plan Brick Township, New Jersey*

B3. Recent EPA Regulations: Implications for Protection

This session presented recent and upcoming EPA regulations and guidance, and ways that state and local officials are working to incorporate them into SWP. At the federal level, there are major EPA regulations and guidances under the SDWA and CWA.

SDWA regulations include:

- Underground Injection Control (UIC) Class V Rule;
- UIC Management Plan for Class V Wells;
- Interim Enhanced Surface Water Treatment Rule;
- Long Term 1 and Long Term 2 Surface Water Treatment Rules; and
- Groundwater Rule.

CWA regulations include:

- Concentration Animal Feeding Operations Rule;
- Decentralized Waste Water Management Guidelines; and
- Storm Water Rule.

Regulations under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) offer ways to protect drinking water as well. From a state's perspective, the Arizona Department of Environmental Quality's approach to promoting SWP focuses on outreach and education; technical assistance (e.g., GIS support and presentation to elected officials); and cost savings through monitoring waivers. At the local level, educational efforts support regulatory programs. For example, educational efforts on onsite/decentralized wastewater management relate to biosolids and septage, animal waste, wastewater reuse, and stormwater.

Presenters in this session included:

- Peter Shanaghan, Chief of Staff, EPA Office of Ground Water and Drinking Water, Moderator.
- Robert Rubin, Ph.D., Scientist, Department of Biological & Agricultural Engineering North Carolina State University. *Environmental Educational Efforts In Support of USEPA*
- Jeffrey Stuck, Administrator of Drinking Water Programs, Arizona Department of Environmental Quality. *Source Water Protection Practical Experiences*

B4. Ripe Opportunities: Implementing Protection by Leveraging Key Federal and State Programs

This session focused on how to use key federal and state programs to benefit source water protection activities.

Federal agencies may be leveraged in diverse ways to protect source water. As landholders, federal agencies (e.g., Forest Service, Department of Transportation, Defense Department) manage expanses of land and operate active facilities. Federal agencies have existing authorities that may be used for protecting source water (e.g., Forest Service, EPA), are sources of data and information (U.S. Geological Survey), and may be able to provide additional resources (EPA, Natural Resources Conservation Service).

The Association of State Floodplain Managers is an excellent partner, since flood plain managers share similar concerns as SWP managers: flood-induced erosion and sedimentation; drinking water contamination; loss of flood plain natural resources such as wetlands; and the potential for floods to transport and transfer hazardous materials. No adverse impact to flood plains is a strategy that limits activities that could adversely impact flood damage to another property or community, and also protects source waters.

New Hampshire targeted remediation at the state and federal level and outreach/assistance on utilizing agricultural programs, household hazardous waste collection, non-point source grant funding, drinking water infrastructure program, and state land conservation funding to aid source water protection activities. New Hampshire also targeted other programs, such as underground storage tanks, hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA), underground injection control, pesticides program, transportation programs, and sanitary survey integration.

The Rhode Island Department of Health partnered with the University of Rhode Island to develop the Rhode Island Source Water Protection Program.

In Maine, most land use decisions are made at the town level, often with strong resistance to federal and state mandates. Education is a key component of overcoming local resistance to state and federal involvement. Tools include comprehensive planning initiatives that provide seed money, CWA Section 319 watershed management funds, and help from Soil and Water Conservation Districts.

In the Upper Tenmile Creek Watershed (Montana), contamination of domestic water supplies, contaminated yards and releases of mine waste into streams via erosion and mine adit (unfiltered) drainage necessitated a collaborative response and a watershed approach. Opportunities to reduce contamination included removing abandoned mine waste, publicizing the protection of the City of Helena's Source Watershed, using the CWA mandate for TMDLs, increasing stream flows in Tenmile Creek, managing water supplies better, establishing a watershed coalition, managing watershed development, creating sustainable fisheries habitat, addressing noxious weeds, restoring riparian areas, providing potable water for the Town of Rimini, providing educational opportunities, providing wildfire protection, and forming a Water and Sewer District.

Presenters in this session included:

Christine Olsenius, Program Consultant, Tennessee Valley Authority, Moderator.

Panel 1:

- Larry Larson, Executive Director, Association of State Floodplain Managers. *Source Water Protection – Leveraging Key Federal and State Programs*
- Sarah Pillsbury, New Hampshire Office of Environmental Services. *Getting Help with Source Water Protection*
- Lenny Bellet, Environmental Analyst, Rhode Island Extension Service, University of Rhode Island. *RIPE Opportunities For Water Quality Protection: A Unique Partnership Between the Rhode Island Department of Health and the URI Cooperative Extension*

- Andy Tolman, Source Protection Manager, Maine Drinking Water Program. *Creating Municipal Source Protection*

Panel 2: *Mine Waste Cleanup Within a Source Watershed*

- Jesse Aber, Water Resources Planner, Water Resources Division, Montana Department of Natural Resources and Conservation.
- Bo Stuart, Hydrologist, U.S. Forest Service.
- Shahid Mahmud, U.S. EPA Headquarters.

C1. Implementing Protection Through Partnerships: State/Local/Tribal

This session highlighted state and local partnerships to promote effective implementation of source water protection. Clean Water Action has built partnerships for SWP by realizing several important things: reach out to citizen activists; flexibility is important; look for existing partnerships; and find experts and professional activists to help build partnerships, keep the message simple, choose a variety of watersheds, and cater to individual needs.

North Carolina highlighted several local SWP success stories. These include: creation of the Little River Regional Park, when Durham County, Orange County, the Triangle Land Conservancy, and the Eno River Association worked together to buy land bordering the watershed slated for a landfill and created a 391-acre recreational park. Also, in the City of Burlington, pesticides from local agriculture were entering the water supply; through public education and dialogue through Agricultural Extension agents, farmers were made aware of how their activities affect water quality and ways to change their practices. The educational effort was much less expensive than the annual costs of increased water treatment to remove pesticides.

In New Hampshire, statewide SWP partnerships are with the Northeast Rural Water Association, the Society for the Protection of New Hampshire Forests, Northeastern Rural Community Assistance Program (RCAP), New Hampshire Department of Agriculture, and the New Hampshire Water Works Association. Local communities are involved as well. The ingredients of a successful SWP partnership include local motivation and commitment, expertise and staff time, an effective lead agency, and patience. Different partners need to be involved for different needs, and local commitment is essential.

Plaistow, NH was selected for Northeast Rural Water Association technical assistance. Plaistow's Water Plan encompassed education and outreach, voluntary inspections, water source protection signs, and promoting hazardous waste collection and management (e.g., hazardous waste days). Other activities include annual stream monitoring, clearer ordinances, and GIS mapping of stormwater drains.

Presenters in this session included:

- Surabhi Shah, Environmental Engineer, EPA Office of Ground Water and Drinking Water, Moderator. *Implementing Protection Through Partnerships: State/Local/Tribal*
- Sparky Anderson, Executive Director, Clean Water Action.
- Jill Senter and Tim Moore, Plaistow (NH) National Rural Water Association Project. *Community Involvement–The Key to Preserving Water Quality In Plaistow, New Hampshire*
- Paul Susca, Environmental Program Manager, New Hampshire Department of Environmental Services. *The Role of Partnerships in Statewide Source Water Protection*

C2. Upstream Neighbors: Working with Local Communities & Identifying Contamination Sources

This session highlighted four efforts to bring together partners for SWP in Washington Township (NJ), Lake Meredith in Texas, the City of Philadelphia, and the City of Dayton. Each described their partnerships for wellhead and source water protection activities. Lessons these partners learned include: communities cannot do SWP alone, and partnerships can help; familiarity breeds trust; it is important to acknowledge and value partners' interests and contributions; partnerships are reciprocal and long-term; partnerships take time; and water suppliers need tools to protect source water.

Presenters in this session included:

- Vicki Binetti, Acting Deputy Director, Water Protection Division, EPA Region 3, Moderator. [Spoke about Washington Township, NJ]
- Emmett Autrey, President of Texas Water Utilities Association and City of Amarillo. *Lake Meredith Source Water Protection Project*
- Chris Crockett, Source Water Protection Manager, Philadelphia Water Department. *Upstream Partners*
- Gayle Galbraith, Environmental Scientist, City of Dayton. *City of Dayton Water – Environmental Management*
- Julie Kollar, Program Manager League of Women Voters of Pennsylvania, Water Resource Education Network, Facilitator.

C3. CWA/SDWA Integration: Linking Watershed Protection and Source Water Protection (Continued)

This session built upon Session B1 by presenting a variety of successful approaches to leveraging the opportunities provided by linking source water and watershed protection. Four states (Minnesota, North Carolina, Georgia, and Oregon) highlighted their experiences with integrating CWA and SDWA priorities. CWA resources tapped included TMDLs, CWA Section 305(b) and CWA Section 303(d) grants, the Clean Water Management Trust Fund, Watershed Protection, Basin-wide Planning, and Combined Sewer Overflow controls.

Water quality standards, such as in-stream numeric standards and land-use standards, can be a tool to protect source water. Other important issues include increasing sampling frequency and

creating standards for pesticides and other contaminants. Some states assess water quality to determine whether water bodies meet the public water supply use, after drinking water treatment.

Presenters in this session included:

- Art Persons, Planner, Minnesota Department of Health, Source Water Protection Program. *Upper Mississippi Source Water Protection*
- Steve Zoufaly, Environmental Supervisor, North Carolina Department of Environment and Natural Resources, Division of Water Quality. *North Carolina Department of Environment and Natural Resources*
- Billy Turner, President, Columbus (GA) Water Works. *Middle Chattahoochee River Watershed Study*
- Sheree Stewart, Program Coordinator, Oregon Department of Environmental Quality. *Using CWA 319 as Leverage for Source Water Protection*

C4. Leveraging Rural Partnerships

In this session, five representatives of organizations involved with rural issues presented examples of how partnerships were instrumental in protecting source water.

Indiana Natural Resources Conservation Service presented experiences with two efforts: Fort Wayne and the St. Joseph River Watershed Initiative (SJRWI) to address atrazine, sediment, and nutrient problems. The SJRWI effort was more successful, because all stakeholder groups were engaged from the beginning; coordinators were savvy and outgoing; they obtained considerable data, but did not wait for the data to drive the work; they were continuously reaching out for support; and there was trust among the partners.

In the early 1990s, when taste and odor and sedimentation problems arose in the Cheeney Reservoir in Wichita, Kansas, local Conservation Districts met and formed the Cheeney task force and Cheeney Citizens Management Committee (CCMC). In selecting projects to fund, the CCMC favored selecting BMPs that protect water quality, and worked with dairy farmers to install waste water management systems.

Washington State University Ferry County Cooperative Extension worked with Ferry County and the Colville Reservation on the Water Education and Training (W.E.T.) Project to provide hands-on learning programs for children. As a result, youth display interest, enthusiasm, and knowledge of water quality, and schools have integrated water quality education into their scheduled activities.

The Lake Tahoe Basin Environmental Improvement Program (EIP) is a strategy to achieve the nine environmental thresholds for the Basin. The EIP strategy is designed to accomplish, maintain or exceed multiple environmental goals, and develop a more integrated, proactive approach to environmental management. The key to this strategy is reliance upon partnerships with all sectors of the community, including the private sector and local, state, and federal government.

The Technical Assistance Center for Water Quality at Western Kentucky University assists small systems throughout the country in meeting SDWA requirements. Due to atrazine problems in the State, they started the Kentucky Pesticide Workgroup and worked with local conservation districts and farmers on cost-sharing ways to help farmers to install BMPs or use alternative herbicides.

Presenters in this session included:

- Mary Ann Rozum, National Program Leader, Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture (USDA), Moderator.
- Susan McCloud, Water Quality Specialist, Indiana Natural Resources Conservation Service, USDA. *Leveraging Rural Partnerships*
- Jerry Blain, Water Supply Projects Administrator, City of Wichita Water and Sewer Department.
- Caroline Blake, W.E.T. Program Coordinator, Ferry County (WA) Cooperative Extension and Colville Indian Reservation.
- Jason Drew, District Manager, Nevada Tahoe Conservation District.
- Ritchie D. Taylor, Director of the Center for Water Resource Studies, Western Kentucky University.

Plenary Session: Financing the Journey to Protection

To begin this session, Elizabeth Hickey of the University of Maryland Environmental Finance Center offered a brief “Financing 101” presentation, explaining how to use federal, state and local programs plus innovative financing techniques to make protection happen. A “community quilt” combines government programs and financing structures, such as innovative rate structures, public-private partnerships and storm water utilities. Public funding is available through capital programs; planning programs; community development block grants; CWA funds, including SRF and Section 319 monies; education programs; project maintenance funding; land acquisition programs; agricultural BMPs; urban programs; wetlands programs and riparian forest buffer programs. Private financing techniques include setting up drinking water and waste water rate structures, which frees up local funds by making water and sewer utilities self-supporting. Partnerships with industry and communities can also help source water protection efforts: landscaping can be designed to help protect against run-off; pesticide and insecticide use can be reduced or eliminated; and impervious surfaces can be replaced. EPA’s pamphlet “[Funding for Source Water Protection Activities](#)” offers a comprehensive list of available funding sources for SWP.

A panel provided three examples of how communities creatively acquired resources to fund source water protection.

To address the County’s growing population, the Berkeley County task force initiated a partnership to acquire the resources and technical capacity to protect the watershed. Strong committee participation from nearly thirty institutional players including county, state and federal agencies; universities; construction, real estate and development associations; watershed and environmental groups; and concerned citizens brought resources, technical capacity, and

momentum to the project. These partners and collaborators have submitted over \$750,000 for research, community education, plan implementation and capacity building funding.

Seattle Public Utilities has a 100 year tradition of watershed protection and has set aside 100,000 acres to protect a watershed serving 1.3 million people. Beginning in 1898, the City purchased condemned land for the nation's first municipal hydroelectric power system. The City purchased "fixer-uppers" (timber lands and condemned lands) throughout the 1900s; by the 1980s the City owned 2/3 of the watershed, and the federal government owned the remainder. Careful management via an \$84 million Habitat Conservation Plan and working with neighboring jurisdictions have been key to protecting Seattle's watershed. Seattle Public Utilities started a partnership with children (advocates for the future); those children are now adults and care about their watershed.

The New York City Department of Environmental Protection (NYCDEP) entered into an inter-municipal memorandum of agreement (MOA) with watershed communities, New York City, New York State, EPA, and environmentalists on watershed protection. Major elements of the MOA include land acquisition, new and updated regulations to address land uses and other innovative elements, and environmental and economic partnerships between the State, the City, Coalition of Watershed Towns, the New York City Municipal Water Finance Authority, the New York City Water Board and a number of civic advocacy organizations. NYCDEP and its local partners have aggressively sought funding from other sources, such as the DWSRF and CWSRF, and Water Resources Development Act grants, and is trying to get money from USDA to work with agricultural and forestry partners.

Presenters in this session included:

Nanci Gelb, Deputy Director, EPA Office of Ground Water and Drinking Water, Moderator

- Elizabeth Hickey, Senior Advisor, Environmental Finance Center, University of Maryland.
Financing Source Water Protection with a "Community Quilt"

Panel:

- Joseph Hankins, Director of The Conservation Fund Freshwater Institute, Environmental Finance Center Network, Berkeley Springs, West Virginia. *Berkeley County, West Virginia Financing for Source Water Assessment and Protection*
- Suzanne Flagor, Director, Seattle Public Utilities, Watershed Management Division. *100 Years of Watershed Protection (In 10 Minutes or Less)*
- Mark Hoffer, General Counsel, New York City Department of Environmental Protection. *The New York City Watershed Memorandum of Agreement - Forging A Partnership to Protect Water Quality*

CLOSING PANEL DISCUSSION

The conference closed with a facilitated panel discussion, titled "It's In Your Hands: Next Steps on the Path to Protection." Panel members spoke about their commitment to SWP and next steps. The panel included: Peter Varga, Office of Watershed Management, City of Cambridge Water Department; Brendan Murphy, National Rural Water Association (NRWA); Charles

Whitmore, USDA, Conservation Division; Alan Vicory, Ohio River Valley Water Sanitation Commission (ORSANCO); and Geoffrey Grubbs, EPA, Office of Science and Technology.

How far along are you on the path to protection and what challenges are you facing?

Brendan Murphy: NRWA has developed over 6,000 wellhead protection plans and is working on another 1,300. NRWA will continue to work with and educate communities that are developing SWP plans. We have been most successful in implementing education on wellhead protection (WHP) and SWP, and we are continuing to partner with EPA in that capacity. The biggest challenges we have faced are continuing to work with existing partners and developing new partnerships. Specifically, NRWA needs to partner with states, EPA regions, and rural development offices; state RWAs will work with state agencies.

Charles Whitmore: SWP is a great challenge. I feel very good about where we are now. We have a commitment from this administration to protect water supplies through the Farm Bill. The Farm Bill provides a new tool box to use. Farmers are also committed. Partnerships are important. We need to work on bringing resources to bear for implementation.

Alan Vicory: I feel good about what we have accomplished on the Ohio River. A consortium of water suppliers has developed an early-warning spill detection system that works—it has revealed the presence of contaminants in intakes that we never would have otherwise known about. This cooperative system is made possible by partnerships. There are challenges with connecting CWA and SDWA, and issuing NPDES permits that protect source waters. SWP demonstrates that there is a strong need to integrate many programs, including RCRA, CWA, and SDWA.

Peter Varga: The Cambridge Water System is in good shape in terms of assessing threats and is proactively engaging businesses for protection efforts. However, the watershed covers 24 square miles, and the water system owns only five percent of that—this means a loud voice is needed to protect source water. The challenges include determining how to get businesses and municipalities to communicate with each other, and how to get the larger state agencies, such as the highway department, to consider protection during their planning stages. It is also hard to convince people that they are stakeholders; the people who live near Cambridge's reservoir are not served by the system and do not drink that water. There needs to be a forum for people to come to the table, but there currently is no mechanism for this.

Alan Vicory: The toughest challenge is the human aspect and getting people involved and interested and to attend meetings. If people come to the table and have a dialogue, things happen. There is no substitute for a face-to-face dialogue to get things done.

Geoff Grubbs: It is hard to get a common voice among various agencies. On the CWA side, where there are regionally-based organizations that cross state lines, it is extremely important to communicate why protection is important. Also, it is important to have a clear common purpose and clarity about what the science says, what is being protected, and the goal you are trying to achieve. With water quality standards, it is very important that we determine what to do

about emerging contaminants. EPA plans to publish a final strategy soon that will lay out the steps to take, a time frame, and a process for the criteria and standards program.

If you could ask for one additional partner, who would it be and why?

Brendan Murphy: Technical assistance providers. For example, the U.S. Geological Survey has a lot of useful data (such as aerial maps) available. The Groundwater Foundation, GWPC, and ASDWA are also valuable partners.

Charles Whitmore: Farmers and ranchers. Most source waters originate on or lie within privately owned land, and it is important that landowners understand why we want to work with them, and we need to understand their needs. Everybody is a stakeholder. Educating partners is always a challenge. USDA has a state technical committee to bring people together and provide them with the resources they need, so the Farm Bill lives up to its potential. This group makes decisions about USDA programs and advises on problems and solutions. All of us need to become involved with those groups.

Alan Vicory: I agree with Charles. At ORSANCO, we have not included agricultural folks in our discussions and plans. That is something that will change, and we are working along those lines. It may be difficult to convince farmers that water quality is important – we need to make benefits more local. It will take us a long time to get there, but the tools are there and the commitment is there—we just need to bring them into the process.

Geoff Grubbs: Farmers. Water quality problems associated with agriculture are often most easily approached through key agricultural groups, USDA, and state and local conservation agencies. Agricultural problems are rarely solved from the top down, but require close partnerships—and the closer to the farmer, the better.

What information from this conference would be useful to bring home?

Peter Varga: Notification needs to be improved in Cambridge. We cannot engage businesses or stakeholders without notification. We need to communicate with planning departments in addition to the conservation community to let them know where the sensitive areas are. Some states are doing interesting things. Maine requires developers to notify the water system if they plan to build in the watershed. Idaho is using GIS to identify overlay districts. Some useful suggestions for seeking out funding resources have been presented as well.

Brendan Murphy: Our annual meeting with our state affiliates is coming up, and we hope to share the financing information and networking suggestions that we have heard here. Several state RWA representatives are at the conference, and they will have much to take back with them.

Alan Vicory: This is an astoundingly well organized conference. I would like to congratulate the planners of this conference on a job well done. I have learned how SWP plans have been

turned into practice. For example, there is an early warning monitoring system on the Delaware and Susquehanna Rivers. Plans are turning into actions. Conversations and collaboration have been key points of this conference.

Charles Whitmore: I have a better understanding of where SWP fits into the activities of the USDA. It's important that we ensure local and state SWP people are connected with state technical committees.

Geoff Grubbs: This conference has reinforced the magnitude of the task that lies before us. The interaction between SWP and the Clean Water Act is a two-way street. Much has been said about how the CWA can support SWP; but wellhead protection and other broad source water actions have become part of the CWA dialogue. Funding can be tough, but it's also an important topic.

What more can EPA do?

Peter Varga: We must prioritize what we ask for based on the major risks to our watershed. Transportation is a major concern. EPA could coordinate more closely with the Department of Transportation (DOT) and get them to think about SWP and implementing BMPs along roadways. On a national level, I would like to see a greater push to coordinate between government agencies. For a municipal water supplier—getting the ear of larger government organizations would be very helpful. Specifically, I would want DOT to conduct a comprehensive review of every outfall to get sound scientific data to demonstrate transportation is an issue affecting water quality, and create long term management plans.

Brendan Murphy: EPA can continue to engage its current partners and seek out new ones. It would probably be helpful to find a forum that would more closely involve water systems. Our organization has been successful because we listen to water utility systems. We would like to continue with and build on the cooperative effort we have with EPA.

Charles Whitmore: EPA should take care to not leave the agricultural community out of planning. Look at ways to collaborate and share expertise among federal and state agencies, and at the local level on mutual concerns and issues. Support the safe harbor policy. The USDA would like to continue our working relationship with EPA.

Alan Vicory: The question should really be what all of us can do; this is not just a top-down effort. EPA should work on integrating RCRA, CWA, and SDWA programs at the state level, and assisting collaboration among states. The future of SWP is at the local level—this is where actions ultimately will occur.

Geoff Grubbs: I agree that this is not just a top-down effort. On transportation, it is useful to partition the problem into chunks. Congress is moving through a new [highway bill](#) that is very similar to the Farm Bill in that water quality and water protection are included. From the CWA point-of-view, the subject of discharges and highway runoff is taken care of through NPDES permitting and the non-point source program. The coastal zone management agencies are very

much involved in this whole process. We need to keep in mind the depth and breadth of the conversations we've experienced during this conference and we need to maintain the depth after we leave.

Useful Web Sites

Links to non-EPA web sites do not imply any official EPA endorsement of or responsibility for the opinions, ideas, data, or products presented at those locations or guarantee the validity of the information provided. Links to non-EPA servers are provided solely as a pointer to information that might be useful to EPA staff and the public.

The Office of Ground Water and Drinking Water's web site (<http://www.epa.gov/safewater/>) contains useful information about Safe Drinking Water Act programs.

Visit EPA's source water protection web site (www.epa.gov/safewater/protect/swpconf.html) for updates on topics of interest to conference participants and new information on opportunities for moving from assessment to protection.

EPA's Drinking Water Academy <http://www.epa.gov/safewater/dwa.html> provides online courses on a variety of topics of interest to SWP planners, including an introduction to SWP, best management practices, and EPA regulations.

EPA's State SWP contacts web page provides links to all state SWP programs.
<http://www.epa.gov/safewater/source/contacts.html>

The Groundwater Foundation is a nonprofit organization that provides the public with information about groundwater. (<http://www.groundwater.org>).

Communicating Assessment Results

The Louisiana Department of Environmental Quality's Web site (www.deq.state.la.us/evaluation/aeps/) provides information on Louisiana's groundwater baseline monitoring project and wellhead protection program.

GIS Tools for Source Water Protection

EPA's WATERS (Watershed Assessment, Tracking & Environmental ResultS) data base (<http://www.epa.gov/waters/>) unites water quality information from several independent and unconnected databases.

EPA's Wellhead Analytic Element Model (WhAEM) (<http://www.epa.gov/athens/software/whaem/index.html>) is a ground water delineation tool.

Source Water Protection and Security

The Federal Emergency Management Agency's Web site on terrorism (<http://www.fema.gov/hazards/terrorism/>) defines FEMA's role in responding and/or managing terrorist activities.

The Center For Disease Control's bioterrorism Web site (<http://www.bt.cdc.gov>) provides information on various biological agents and their threats.

EPA's security Web site (<http://www.epa.gov/safewater/security/index.html>) provides an overview of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, EPA's Strategic Plan, training information, and tools public water systems can use to help them meet the Bioterrorism Act's security requirements.

WaterISAC (<http://www.waterisac.org/>) is a highly secure Internet portal for sensitive security information and alerts to help America's drinking water and wastewater community protect consumers and the environment. It is available to registered users only.

The American Water Works Association's security Web site (<http://www.awwa.org/advocacy/learn/security/>) provides training information, available funding resources, and contact lists for public water systems.

The U.S. Army Medical Research Institute of Infectious Diseases provides a Medical Management of Biological Casualties Handbook at <http://www.usamriid.army.mil/education/bluebook.html>.

The Homeland Defense Office of the U.S. Army Soldier and Biological Chemical Command has a variety of information for first responders and the public on its Web site (<http://www.apgea.army.mil>).

New Hampshire has developed an Emergency Plan Guide that can be downloaded at <http://www.des.state.nh.us/wseb/>.

Conservation and Land Acquisition

EPA's Smart Growth web page (www.epa.gov/smartgrowth) provides news and information related to Agency smart growth initiatives.

Leveraging Key Federal and State Programs for Source Water Protection

Federal Programs

The U.S. Department of Transportation maintains a page of information about the reauthorization of the Transportation Equity Act for the 21st Century. (<http://www.fhwa.dot.gov/tea21/>)

The U.S. Department of Agriculture has a variety of web sites and programs of interest to SWP planners, including:

Rural Utilities Service has a page of Fiscal Year 2003 grants and loans available for Water and Environmental Programs at <http://www.usda.gov/rus/water/2003funding.htm>.

The Cooperative State Research, Education and Extension Service provides research based information to farmers and ranchers on the best crop, livestock and forest production methods to protect groundwater through over 100 universities. See <http://www.ree.usda.gov> and click on state partners.

The Farm Service Agency administers the Conservation Reserve Program, which provides annual rental payments to remove cropland from production around sensitive areas, such as wellheads <http://www.fsa.usda.gov>.

The Natural Resources Conservation Service provides the Environmental Quality Incentive Program, and administers the Farm and Ranch Land Protection Program <http://www.nrcs.usda.gov>. See also at www.usawaterquality.org.

The Rural Utilities Service provides funding for rural drinking water and water treatment systems, including easements necessary to protect source water. <http://www.usda.gov/rus/water>.

Information on the Farm Bill is available at <http://www.usda.gov/farmbill/>.

The Forest Service administers the Forest Land Enhancement Program through the state foresters. Payments to woodland owners can be used to protect water quality through improved tree management and planting. See <http://www.fs.fed.us/>

The U.S. Geological Survey maintains a large amount of water resources information at <http://water.usgs.gov/>.

State Programs

Rhode Island's Department of Health, Office of Drinking Water Quality's web site is <http://www.health.ri.gov/environment/dwq/Home.htm>. The University of Rhode Island's Extension Service has a web site at <http://www.uri.edu/ce/wq/>.

New Hampshire's Drinking Water Source Protection Program uses regulatory and non-regulatory approaches to protect, and encourage others to protect, groundwater and sources of public drinking water. Information can be found on New Hampshire's Web site at <http://www.des.state.nh.us/dwspp/>.

The Association of State Floodplain Managers is an organization of professionals involved in floodplain management, and deals with many of the same issues as source water protection planners. (<http://www.floods.org/home/default.asp>)

CWA/SDWA Integration

Under the Clean Water Action Plan (CWAP), state, federal, tribal, regional, and local governments, as well as private partners, will work collaboratively to protect and restore priority watersheds (<http://cleanwater.gov/swa/>).

North Carolina Department of Water Quality's Web site (<http://h2o.enr.state.nc.us/wswp/>) provides information on their Water supply watershed protection. North Carolina has many informational sites on SWP (<http://www.deh.enr.state.nc.us/pws/>), basin-wide planning (<http://h2o.enr.state.nc.us/basinwide/>), TMDL modeling (<http://h2o.enr.state.nc.us/tmdl/>), and Section 319 non-point source program (<http://h2o.enr.state.nc.us/nps/>).

Financing for Source Water Protection

The EPA Office of Water's funding and grants page (<http://www.epa.gov/water/funding.html>) provides links to financial resources available under a variety of SDWA, CWA, and other programs.

EPA's Office of Watersheds, Oceans and Wetlands has an interactive Web site (<http://cfpub.epa.gov/fedfund/>) that provides tools to identify funding for local watershed projects, including the Catalog of Federal Funding Sources.

The Drinking Water State Revolving Fund (<http://www.epa.gov/safewater/dwsrf.html>) makes funds available to drinking water systems to finance infrastructure improvements, including those that protect source waters.

The Clean Water State Revolving Fund (CWSRF) (<http://www.epa.gov/owm/cwfinance/cwsrf/index.htm>) funds water quality protection projects for wastewater treatment, non-point source pollution control, and watershed and estuary management.

Information about CWA Section 319 funding for the non-point source program, including how to apply for Section 319 loans, is available at <http://www.epa.gov/owow/nps/319hfunds.html>.

USDA has a Web site on Funding sources for water quality that links to a number of different Web sites with information (<http://www.nal.usda.gov/wqic/funding.html>).

EPA's link to its regional Environmental Finance Centers is at <http://www.epa.gov/efinpage/efc.htm>.

New York City's Department of Environmental Protection web site is at <http://www.nyc.gov/html/dep/html/about.html>.